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TITLE Polypropylene mould mfr. - by polymerisation of
ethylene and propylene over metallocene and
organo-aluminium catalyst

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ABSTRACT

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Prepn. of a polypropylene mould (P) consisting of 20-99wt.% of a crystalline polymer, at least 95wt.% of which is polymerised propylene (component (A)) and 1-80wt.% of a non-crystalline ethylene-propylene copolymer with an ethylene content of 20-90wt.% (component (B)) comprises: (a) prepn. of (A) in one or more stages in liq. propylene at 0-100 deg.C and 5-100 bar pressure, with a residence time of 15-400 mins.; and (b) prepn. of (B) in the gas phase in the presence of ethylene, at 0-100 deg.C and 5-100 bar pressure with a residence time of 10-180 mins.. The prepn. takes place over a catalyst consisting of a transition metal metallocene, of formula (I), and an organoaluminium cpd. of formulae (II) or (III).

In formulae, M1 = a gp. IVb, Vb or VIb metal; R1, R2 = H, 1-10C alkyl, 1-10C alkoxy, 6-10C aryl, 6-10C aryloxy, 2-10C alkenyl, 7-40C arylalkyl, etc.; R3-R6 = H, halo, 1-10C alkyl, N(R10)2, SR10, OSi(R10)3, Si(R10)3 or P(R10)2; or 2 neighbouring gps. R3-R6 and the C atoms to which they are bound form a ring; R7 = X, X-X, X-(C(R13)2)p, O-X-O, -(CR11R12)p-, X-O-X, etc.; R10 = halo or 1-10C alkyl; X = M2R11R12; R11-R15 = H, halo, 1-10C alkyl, 1-10C fluoroalkyl, 6-10C aryl, 6-10C fluoroaryl, etc.; or R11+R12 or R11+R13 together with the atoms bound to them form a ring; M2 = Si, Ge or Sn; p = 1, 2 or 3; R8, R9 = CR11R12; m, n = 0, 1 or 2; m+n = 0, 1 or 2; R16 = 1-6C alkyl; q = 2-50.

USE/ADVANTAGE - (P) is used in the prepn. of formed bodies. (P) has good flow properties and excellent low temp. hardness. The process provides (P) in powder form in good yield. (15pp Dwg.No.0/0)